

PROCEEDINGS
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TWO NEW SHREWS FROM OREGON.

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The Biological Survey Collection contains several specimens of two undescribed shrews from western Oregon. One of these forms is a species similar to *Sorex pacificus* Coues, with which it has long been confused. The other is a subspecies of *obscurus*, and is intermediate in some respects between *Sorex obscurus setosus* Elliot and *Sorex obscurus bairdi* Merriam. They may be identified by the following description :

***Sorex yaquinae*, sp. nov.**

Type, adult ♀, skin and skull, No. 73,051, U. S. National Museum, Biological Survey Collection, from Yaquina Bay, Oregon; collected July 18, 1895, by B. J. Bretherton. Original number 2031.

General characters.—In color and general appearance much like *Sorex pacificus*, but smaller and with shorter tail and feet. Skull decidedly smaller in all dimensions than that of *pacificus*, with weaker rostrum, noticeably shorter tooth row and relatively smaller dentition, particularly second maxillary premolar; dental pigmentation darker than in *pacificus*. Decidedly larger than *Sorex obscurus bairdi*, which it resembles somewhat in color; skull larger and rather flatter than that of *bairdi*, with heavier dentition, particularly prominent in the unicuspidate teeth and first incisors.

Color.—*Winter pelage*: Upperparts in general effect mummy brown* or fuscous, tending slightly toward fuscous-black, paling almost imperceptibly on the head and face; color of back continuing well down on the sides and grading into color of underparts. Underparts slightly paler than upperparts, near olive-brown or slightly darker; tail indistinctly bicolor, hair-brown or drab above, light drab or avellaneous below; feet and tarsi avellaneous. *Summer pelage*: Distinctly more reddish than in winter. Upperparts between Prout's brown and cinnamon brown, some-

* Ridgway, R., Color standards and color nomenclature, 1912.

times inclining toward sepia. Underparts paler; near snuff brown, usually between snuff brown and Saccardo's umber; tail and feet about as in winter.

Skull.—In general outline suggesting that of *Sorex pacificus* but much smaller in all dimensions. Compared with that of other (than *pacificus*) American *Sorex* rather large; braincase broad and moderately flat; rostrum medium; interorbital region rather elongate, somewhat depressed; dentition heavy, rather deeply but not extensively pigmented; second unicuspid slightly larger than first, the third much smaller than fourth, which is somewhat smaller than first, the fifth the smallest.

Measurements.—Type (adult female): Total length, 137; tail vertebrae, 59; hind foot, 16. *Skull:* Type (adult female; teeth slightly worn): Condylbasal length, 20.7; palatal length, 8.3; breadth of cranium 9.7; interorbital breadth, 4.3; maxillary breadth, 5.9; maxillary tooth row (anterior edge of second upper incisor to posterior edge of last upper molar measured at alveolar border), 7.6.

Remarks.—Specimens of *Sorex yaquinae* have been examined from Yaquina Bay, Gardiner, Mapleton, and Vida, all localities in Oregon west of the Cascade Mountains and north of the Umpqua River. At Gardiner, Oregon, *Sorex yaquinae* apparently occurs with *Sorex pacificus*, specimens of both species having been seen from there. The two shrews, however, in spite of general similarities, seem to be entirely distinct and are easily separated in the material available. On the other hand, although *yaquinae* occurs with *Sorex obscurus bairdi* at Vida, Oregon, the differences between these two forms is not so clearly marked and it is possible that additional specimens will show specific affinity between *bairdi* and *yaquinae*.

***Sorex obscurus permiliensis*, subsp. nov.**

Type, adult male, skin and skull, No. 91,048, U. S. National Museum, Biological Survey Collection, from Permilia Lake, west base of Mount Jefferson, Cascade Range, Oregon; collected October 2, 1897, by J. A. Loring. Original number 4756.

General characters.—About the size of *Sorex obscurus setosus* with, on the average, slightly shorter tail; decidedly more reddish in summer pelage than *setosus*; skull essentially the size of that of *setosus* (possibly averaging slightly longer), with broader braincase, unicuspidate teeth (particularly anterior two) somewhat heavier and posterior margins of molariform teeth usually more emarginate. Slightly smaller than *Sorex obscurus bairdi*, with actually and relatively smaller feet, and rather paler coloration; skull smaller than that of *bairdi*, with shorter palate, and decidedly weaker dentition.

Color.—*Winter pelage:* Upperparts slightly darker than hair-brown, sometimes approaching chaetura drab, extending, very slightly paler, well down on sides; color of underparts in winter pelage unknown. *Summer pelage:* Upperparts most nearly between snuff brown and sepia, or slightly more yellowish than olive brown, between Saccardo's umber

and olive-brown, paling very slightly on the sides and grading into color of underparts; underparts slightly paler than back, usually between buffy brown and tawny-olive, sometimes tending toward avellaneous; tail scarcely bicolor; above about same color as back, becoming very slightly paler below.

Skull.—Large for the species *obscurus*, somewhat smaller than that of *Sorex obscurus bairdi*, slightly larger than that of *setosus*, and much larger and heavier than that of *Sorex obscurus obscurus*; braincase broad, slightly flattened; rostrum relatively rather long and wide; interorbital region somewhat elongate, not much depressed; dentition moderately heavy, with intense and moderately extensive pigmentation.

Measurements.—Type (adult male): Total length, 117; tail vertebrae, 51; hind foot, 14. *Skull*: Type (adult male; teeth slightly worn): Condylbasal length, 17.9; palatal length, 7.2; breadth of cranium, 8.8; interorbital breadth, 3.7; maxillary breadth, 5.2; maxillary tooth row (anterior edge of second upper incisor to posterior edge of last upper molar measured at alveolar border), 6.4.

Remarks.—The series of seventeen specimens of *Sorex obscurus permiliensis* from the type locality was collected during the first week of October, 1897. Three of these specimens are in worn summer pelage; the others, including the type, are in various stages of transition from summer to winter pelage; none has acquired the full winter coat. Specimens have also been examined from Mount Hood and Detroit, Oregon. The Detroit specimen shows in some respects an approach toward *bairdi*. Intergradation with *Sorex obscurus setosus* seems to be indicated in a specimen of *setosus* from Conrad Meadows, Yakima County, Washington.